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Submittal Data

Spaced Pond Loop Coil Assembly



Project Name:		Representative:
Contractor:		Engineer:
Ref/P.O.#:		Date:
Submitted by:		Date:
<u>Qty:</u>	<u>Part #:</u>	<u>Description</u>

Technical Data

Description:	Spaced 3/4" IPS HDPE pond coil, 300' [91.4m] in length, designed to enhance convective flow through the coil via factory-installed spacers. Assembly bound with nylon cable ties, and strapped to pallet for shipping. Typically 0.5 to 1 ton [1.76 to 3.52 kW] of heat rejection/heat absorption capacity per coil (must be verified with Pond Coil Calculator at www.geo-flo.com *).	
Pipe Material:	PE 3408/3608, DR11, cell classification 345464C, as listed in PPI TR4	*Based upon ASHRAE 2014 publication, <i>Geothermal Heating and Cooling: Design of Ground Source Heat Pump Systems</i> , by Kavanaugh and Rafferty.
Spacer Material:	Polypropylene of high density polyethylene (HDPE)	
Cable Tie Material:	Nylon	
Pipe Diam./Length:	3/4" IPS, nom. I.D. 0.84" [21.3mm]; 300' [91.4m] coil length	
Joining Method:	Heat fusion (pipe is O.D. controlled per ASTM D3035)	
Hydrostatic Design Basis:	1600 psi [11.03 MPa], 0.5 design factor	
Hydrostatic Design Stress:	800 psi [5.52 MPa], 0.5 design factor	
Max. Working Pressure:	160 psi [1103 kPa] at 73.4°F [23°C] with environmental multiplier of 1.0 (see formula/charts below)	
Pre-charge:	Coil is factory pre-charged with 8 to 10 psi [55.2 to 68.9kPa] air pressure	
Max. Sustained Temp.:	140°F [60°C]	
Fluid Volume:	8.79 U.S. gallons [33.3 liters] per coil	

Pressure Rating/Corrections

Polyethylene pipe is pressure rated based upon the following equation:

$$PR = \frac{2 \text{ HDS } F_t A_F}{(DR - 1)}$$

Where:

PR = Pressure Rating in psi

HDS = Hydrostatic Design Stress (800 psi for pond coils)

A_F = Environmental Application Factor (table 1)

F_t = Service Temperature Design Factor (table 2)

DR = Dimension Ratio (11 for pond coils)

Table 1: Environmental Compensating Multipliers

Pipe Environment	Multiplier @ 73.4°F [23°C]
Normal soils: water, anti-freeze solutions	1.0
Hydrocarbon permeated soils or liquids	0.5

Table 2: Temperature Compensating Multipliers

Maximum Sustained Temperature	Multiplier
73.4°F [23°C]	1.00
80°F [26.7°C]	0.94
90°F [32.2°C]	0.86
100°F [37.8°C]	0.78
110°F [43.3°C]	0.71
120°F [48.9°C]	0.64
130°F [54.4°C]	0.57
140°F [60°C]	0.50

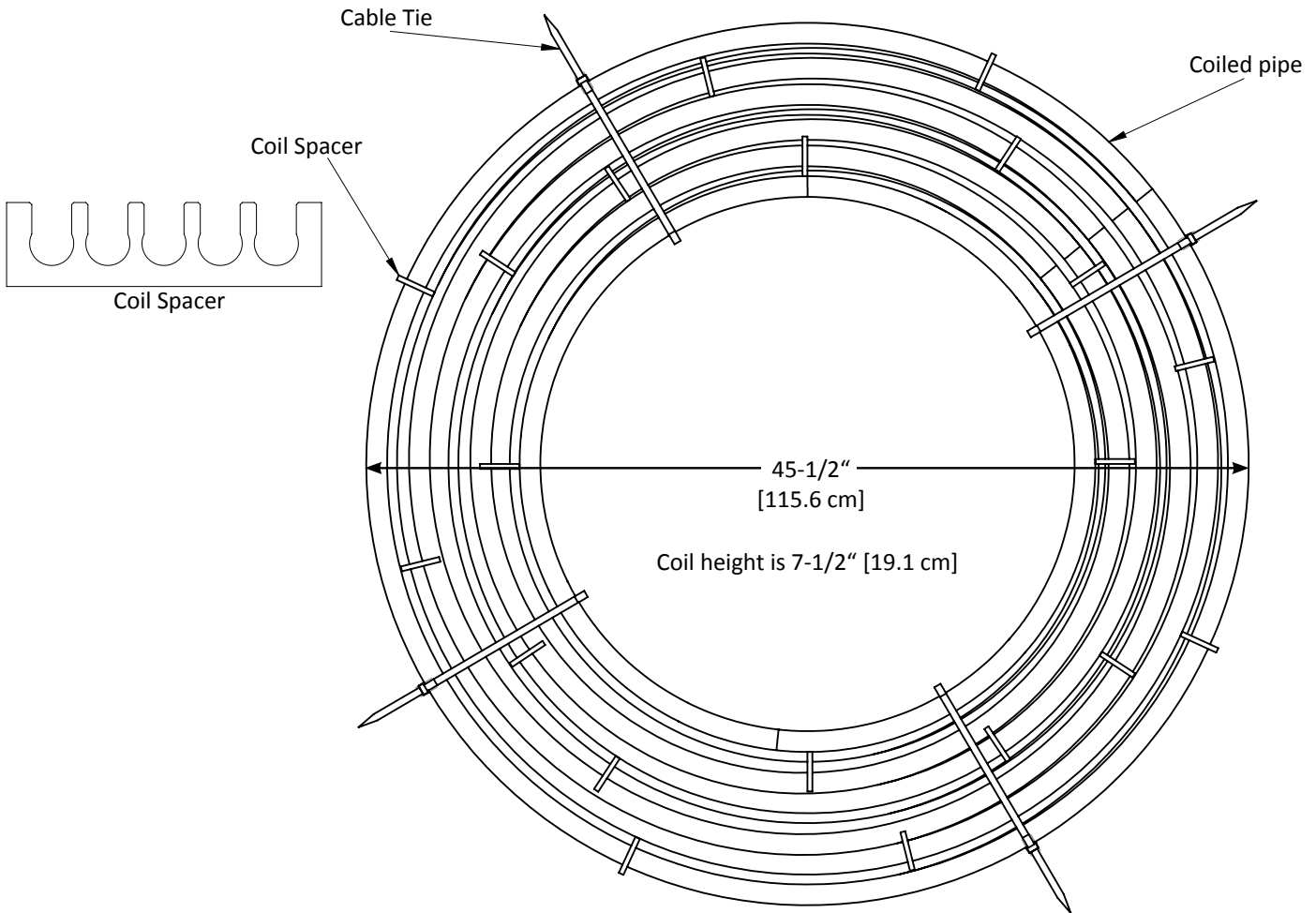
Approved Antifreeze

Ethanol
Methanol
Propylene Glycol



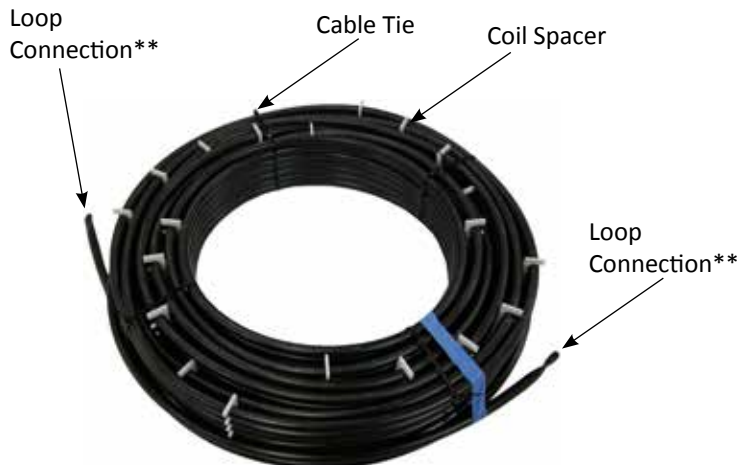
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Physical and Dimensional Data



NOTES:

1. Dimensional data provided for informational purposes and is rounded to nearest $1/16''$.
2. Metric data is a simple conversion of imperial data and should not be considered more accurate.



**Pipe ends are sealed to maintain pressure in the coil during transport and storage.

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